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ABSTRACT

Three test instruments were used in a self-concept study of 373 school children in grades three through six: (1) the Piers-Harris Self-Concept Scale; (2) the Intellectual Achievement Responsibility Questionnaire; and (3) the Children's Manifest Anxiety Scale. The study explored the relationship of self-concept to acceptance of responsibility for intellectual achievement and anxiety over intellectual failure, particularly as a function of age or sex. Results show that, across the grades, pupils with low self-concept gradually assume less responsibility for school success. Pupils with high self-concept gradually increase their acceptance of responsibility for success from grade three to five, maintaining a high level of acceptance in grade six. Girls consistently score higher than boys on measures of anxiety. Pupils with low self-concept show much higher anxiety levels in all grades examined than pupils with high self-concept. Boys with low self-concept showed a generally consistent decrease in anxiety from fourth grade to sixth. The authors anticipate that a longitudinal design study might indicate the establishment of self-concept levels prior to the third grade, in which case attempts to enhance self-concept would need to begin at the outset of the school experience. (Author/NMF)

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INTELLECTUAL ACHIEVEMENT RESPONSIBILITY AND ANXIETY AS FUNCTIONS OF SELF-CONCEPT OF THIRD- TO SIXTH-GRADE BOYS AND GIRLS[1]

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In a recent study, Felker & Bahlke (1970) found nonsignificant rs between self-concept and acceptance of responsibility for success for fourth grade boys and between self-concept and acceptance of responsibility for failure for fourth grade girls, but found strikingly different rs in each case for the other sex (self-concept and acceptance of responsibility for failure (boys), $r = -.370$, $p < .05$; self-concept and acceptance of responsibility for success (girls), $r = .574$, $p < .01$). These results were interpreted as supportive of the suggestion of Crandall, Katkovsky, & Crandall (1965) that locus of control, at least as it is interpreted in the context of the school environment, develops differentially with respect to success and failure experiences, not only as a function of age but also as a function of sex.

The existence of developmental sex differences has been established for some time, not only in terms of physiology and motor development (Terman & Tyler, 1954), but also in terms of characteristic behavior patterns. Zunich

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(1964), for example, confronted three- and four-year-old boys and girls with a failure situation, and found that even at the three-year level boys reacted to failure with a significantly greater number of aggressive, destructive, and defensive behaviors than did girls. Sears, Pintler, & Sears (1946) found significantly more aggressive behaviors in boys than in girls at the age of five, even when the boys' fathers had been absent from the home environment, and Fagot & Patterson (1969) found sex-appropriate play behaviors to be stable throughout the year in three-year-old boys and girls in two nursery classes.

Many have suggested that the elementary school environment is characterized by a favorable bias toward girls (Fagot & Patterson, 1969; Hamachek, 1965; Jersild, 1954 & 1960). Many of the social and learning behaviors expected in school have been asserted to be congruent with a feminine sex role (Sexton, 1970; Terman & Tyler, 1954). It has also been demonstrated that female teachers manifest a significant bias in favor of girls (Meyer & Thompson, 1963; Semler, 1960; Sexton, 1970). In the study cited, Fagot & Patterson (1969) found that even in nursery school, teachers consistently reinforced feminine-type behaviors more than they did masculine-type behaviors. Kellogg (1969) reported that many school-related objects were viewed as feminine by fourth-grade students, and Sexton (1970), noting that 85% of elementary school teachers are female, claimed that "schools are essentially feminine institutions" (p. 25).

The evidence provided by the studies cited above strongly suggest the possibility that personality dimensions are influenced during development by sex-related differences and by the purported sex bias of the elementary

school environment. The results of the Felker & Bahlke (1970) study led the present authors to consideration of the possibility that the level of self-concept makes a systematic difference in the way children perceive and respond to the school environment, and that the investigation here described would contribute to understanding of the development of children in the middle elementary years. The primary relationship investigated was that between self-concept and locus of control.

Self-concept

Self-concept is seen as a complex chain of beliefs and evaluations held by a person with reference to himself. It is held that the self-concept is formulated to a large degree as a result of the reinforcements received by an individual from those with whom he is in closest contact in his earliest years. This position has perhaps been most strongly expressed by Sullivan (1947), whose phrase, "significant others," has been widely accepted to include those persons with whom an infant and child are in most influential early interaction (see also Coopersmith, 1967; Diggory, 1966). Relevant to the present study is the finding of Brookover, Thomas, & Patterson (1964) that in a group of seventh graders 90% named a teacher as someone who was concerned about their achievement in school. Coopersmith (1967) concluded that group norms are more potent than personal norms in influencing self-evaluations. Thus the school environment, with its consistent peer group for each child (i.e., his class), and with the consistent presence of a person (teacher) perceived as a significant other, might be expected to have an important influence on the self-concept of a child.

An important question is, at what point in its development does the self-concept become dominant over the environment -- that is, at what point is the self-concept more likely to control or distort perception so that it (the perception) becomes congruent with the self-concept, rather than the self-concept being susceptible to change as a result of relatively undistorted perceptions which are in fact incongruent with itself? A more applied form of the question is: At what point in a child's life is it reasonable to expect a program of self-concept enhancement to be effective? The question in either form rests on the assumptions of self-consistency theory, which holds that persons tend to behave in ways which will defend or confirm their self-concept. As presented by Lecky (1945), the theory states that all behavior represents the attempt(s) by an organism to maintain its own organization. In order to maintain himself as an identity, distinct from his environment yet not subdued by it, the individual must maintain inner consistency, and he attempts such consistency both by his selective perceptions of experience and by his manipulation of the environment. In the words of Anastasi (1968), "the self-concept operates as a sort of private self-fulfilling prophecy" (p. 577). The person's self-concept, then, is a basic and important source of his behavior and motivation (Ofer & Appley, 1964).

Locus of Control

Children in school are confronted with two major categories of behavioral consequences, namely, success and failure. These categories may be usefully applied not only to grades but also to such events as verbal and nonverbal feedback given by the teacher in response to any classroom activity or situation.

The child may or may not feel responsible for such feedback — as Crandall, Katkovsky, & Crandall (1965) have pointed out, children "may believe that their actions produce the reinforcements which follow their efforts, or they may feel that the rewards and punishments meted out to them are at the discretion of powerful others or are in the hands of luck or fate" (p. 92).

Self-responsibility scales have been developed for use with children (Battle & Rotter, 1963; Bialer, 1961), particularly for use in the study of demographic variables and mental retardation. The Intellectual Achievement Responsibility Questionnaire (IAR) is one such scale; it aims, like other locus of control scales, to measure beliefs of children in their responsibility for success and failure experiences, independently of one another, in the school setting. External foci of responsibility offered by items on the scale are limited to the persons with whom the child comes in the most immediate and sustained contact--parents, teachers, and peers.

Hypotheses

For the child with a relatively high self-concept level (i.e., a positive self-concept), failure would logically be seen as threatening, thus requiring defensive behaviors, and success would logically be perceived as enhancing self-concept, thus inviting confirmatory (non-defensive, accepting) behaviors. For the child with relatively low self-concept, the reverse would be expected to be true--failure will confirm, thus require no defense, but success experiences will be incongruent with the self-concept and require defensive responses. The defensive response of interest to the present investigation is the tendency to accept or reject personal responsibility for success or failure experiences.

Girls' attitude toward school has been shown to become more negative over time (Dunn, 1958), possibly as a result of the increasing equivalence of boys' motor development, or possibly as a result of encountering more male teachers, so that, in either case, girls lose some of the initial "edge" they may have had in the school setting. If either of these possibilities is true, boys would be likely to find such circumstances more congenial to themselves than were the school-related circumstances of earlier years. It is hypothesized, then, that:

1. Girls show a significant increase in the degree to which they reject self-responsibility for failure, across grades three through six, and such increase is associated with self-concept level; and that

2. Boys show a significant increase in the degree to which they accept self-responsibility for success, across grades three through six, and such increase is associated with self-concept level.

Finally, since anxiety is seen as a generalized or specific reaction to ego-threat, and since environmental events (positive or negative reinforcements) which are incongruent with a person's self-concept are ego-threatening (Casteneda, McCandless, & Palermo, 1956; Jersild, 1954; Ruebush, 1963; Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960; Sullivan, 1947), and if in fact the school situation becomes less hostile to boys than to girls as they progress through the grades, it follows that boys with high self-concept level will experience more self-consistent events in school and thus manifest less anxiety. The final hypothesis, then, is that:

3. Boys show a significantly greater decrease in anxiety across grades three through six than do girls, and such decrease is associated with self-concept level.

Method

Subjects. The subjects were 373 boys and girls from grades three, four, five, and six in an urban middle class elementary school in a large midwestern city. The school population was predominantly, but not exclusively, white. There were approximately equal numbers of boys and girls from each grade level (Grade 3: 49 boys, 46 girls; Grade 4: 47 boys, 49 girls; grade 5: 45 boys, 46 girls; Grade 6: 43 boys, 48 girls).

Instruments. Three instruments were used in the study:

1. The Piers-Harris Self-Concept Scale (SC, Piers & Harris, 1964) consists of 80 self-referent statements to which the testee responds 'Yes' or 'No' according to his perception of their appropriateness as applied to himself. The statements were selected from Jersild's (1954) list of things children say about themselves. Factor analysis of the scale across several samples consistently yields at least six identifiable factors: behavior, anxiety, intellectual and school status, appearance, happiness, and satisfaction (Stanwyck & Felker, 1971).

2. The Intellectual Achievement Responsibility Questionnaire (IAR, Crandall, et al., 1965) consists of 34 statement stems which describe school-related hypothetical situations, for each of which there are two alternate explanations. The S selects the explanation which he feels is most appropriate for him. The IAR yields three scores: Total (maximum 34), Positive, and Negative (maximum for each, 17), the latter two representing self-responsibility for successes and for failures, respectively. In original samples ranging in size from 99 to 166, Crandall et al., (1965)

found nonsignificant correlations between the Positive and Negative subscores in grades three, four, and five, and a significant moderate correlation for the two subscores in grade six. Correlations of the IAR Positive and IAR Negative scores for the present sample followed a similar pattern (Table 1). At present no explanation is available for the differences

Table 1

CORRELATIONS OF SELF-RESPONSIBILITY FOR SUCCESS (IAR POS) AND SELF-RESPONSIBILITY FOR FAILURE (IAR NEG) IN GRADES THREE THROUGH SIX

		Grade 3	4	5	6	Total Sample
Boys	N:	49	47	45	43	184
	r:	189[1]	102	-061	100	093
Girls	N:	46	49	46	48	189
	r:	485**	-004	160	392**	238**

[1](decimal points omitted)

** p .01

between the rs of boys and girls in grades three and six. Such consistently minimal correlations, however, suggest that responsibility for successes and responsibility for failures are dimensions of personality which develop independently of each other and are therefore not additive; for this reason, the Total score was not used in this study.

3. The Children's Manifest Anxiety Scale (CMAS, Casteneda, et al., 1956) was developed from a definition of anxiety as the tendency for a child

to experience a general or chronic state of conscious or nonconscious discomfort (Ruebush, 1963). The CMAS consists of 43 statements (responded to by 'Yes' or 'No' according to their judged appropriateness for the respondent) contributing to a total Anxiety score, and 11 similar statements contributing to a Lie score. In this study pupils responded to the full 54 statements, but the Lie scale was not used in analysis. This has been widely used and found to be both internally consistent and stable (Castenedа et al., 1956; Kitano, 1960; Palermo, 1959).

All instruments were administered by classroom teachers in regular class sessions over a four-week period during the first (Fall) semester of the school year. Teachers of third-, fourth-, and fifth-grade children were instructed to read aloud both the instructions and all items as children read silently, then marked their responses on the test booklets. Teachers read the instructions, but not the items, to sixth-grade children. The present authors administered tests as necessary to children who had missed regular administrations because of absences or inter-class transfers during the testing period.

Analysis. The hypotheses were tested using three-way factorial analysis of variance (Winer, 1962) with a sample selected as follows: all pupils were ranked by grade and sex according to self-concept score. The 15 pupils of each sex and grade with the highest self-concept scores (High SC) and those with the lowest self-concept scores (Low SC) were retained for the anova. The total number of pupils included in the anova sample was thus 240. Exclusion of the (approximately) middle third rather than splitting High SC and Low SC groups by use of the median maximizes potential differences. This seems justified on the grounds that the research questions are pre-

liminary ones (necessary in the absence of data in this area), and also because there appears to be some question that children scoring in the middle ranges of self-concept measures represent not a "medium" self-concept level but an unstable or undifferentiated self-concept, relative to those children scoring high or low (Diggory, 1966).

Results

Results of the analyses are presented in Table 2. For the analysis of IAR Negative scores, the only effect even to approach significance was the interaction of Self-Concept X Sex ($p < .10$). Since the predicted effect for grade was not found, hypothesis 1 was not supported. The data suggested, however, that there is a tendency for differences in IAR Negative to exist by sex at all grade levels investigated, and that difference seems to be somewhat related to self-concept level.

The analysis of scores for IAR Positive supported hypothesis 2. While the only interaction effect to reach significance was the Grade X Self-concept interaction, there were strong main effects for both Self-concept and Sex. The means for High SC and Low SC boys on IAR Positive are presented in Table 3, examination of which suggests that the hypothesis in question might have been stated more strongly with respect to the differential effect of self-concept level.

Table 2

Analysis of Variance Summary: Self-Responsibility for Failure (IAR NEG), Self-Responsibility for Success (IAR POS), and Anxiety

		IAR NEG		IAR POS		ANXIETY	
	df	MS	F	MS	F	MS	F
Grade (Gr)	3	7.18	1.0	6.73	1.0	122.67	2.43
Self-concept (SC)	1	0.94	1.0	277.35	41.83**	6784.07	134.28**
Sex	1	1.84	1.0	74.82	11.28**	889.35	17.60**
Gr X SC	3	6.68	1.0	49.48	7.46**	132.63	2.63
Gr X Sex	3	2.25	1.0	13.66	1.90	217.69	4.31**
SC X Sex	1	44.20	3.87	-0.42	1.0	86.40	1.72
Gr X SC X Sex	3	11.48	1.01	7.22	1.16	137.41	2.72*
Error	224	11.43		6.63		50.52	

*p .05
**p .01

Table 3

Self-responsibility for Success: Means for Boys, by Self-concept level and grade

	High SC	Low SC
Grade 3 (A)	12.20	12.87
Grade 4	12.27	10.67
Grade 5	13.67	10.53
Grade 6 (B)	13.87	9.00
t (B - A)	2.28*	3.62**

*p .05
**p .01

Hypothesis 3 was supported by the analysis in that wild boys did show a decrease in anxiety across the grades examined, girls' anxiety scores increased moderately, so that there were significant interactive effects both for Grade X Sex and for Grade X Self-concept X Sex. However, the chief source of interaction effect for the three-way interaction was Low SC girls--High SC girls and boys Low SC and High SC boys showed similar movement across the grades. The main effects for self-concept and sex were highly significant; these results were not surprising in view of the literature on anxiety in children.

Discussion

With respect to the construct "acceptance of responsibility for success" (IAR POSITIVE), while the mean for all girls was slightly higher than ~~that for~~ boys (girls, X - 13.00; boys, X - 11.88, t - n.s.), the major difference was found across Self-concept. Examination of the interaction matrix of means (Table 4) and of the graphic representation of this effect (Figure 1), shows a consistent downward trend for pupils of Low SC across the grades, indicating that pupils with Low SC gradually assume less responsibility for school successes. On the other hand, pupils with High SC gradually increase their acceptance of responsibility for success from grade 3 through grade 5, and maintained their high level of IAR Positive in grade 6. A reasonable explanation for the plateau across grades 5 and 6 is that this is a ceiling effect, that is, that a mean in excess of 14 points on a 17-point scale is as high as respondents can be expected to achieve.

The findings of this investigation with respect to the analysis of IAR Positive may be seen as strongly supportive of self-consistency theory. For pupils with high self-concept levels, the experience of success confirms the self-concept, so that these pupils would be expected to assume increasingly more responsibility for success as the self-concept becomes more stable over time, and perhaps as repeated success experiences become more strongly reinforcing of a positive self-concept. On the other hand, pupils with low self-concept are faced with incongruence when they experience success. The incongruence may be

Table 4

Means for Grade X SC Interaction (IAR Positive);
Significant Differences (Neuman-Keuls)

	High SC	Low SC
Grade 3	12.62 (A)	12.40 (E)
Grade 4	13.17 (B)	12.07 (F)
Grade 5	14.20 (C)	11.17 (G)
Grade 6	14.07 (D)	9.83 (H)

Mean:	Differs from Mean(s):	
H	C, D. B	(p .01)
	A, E	(p .05)
G	C. D	(p .05)

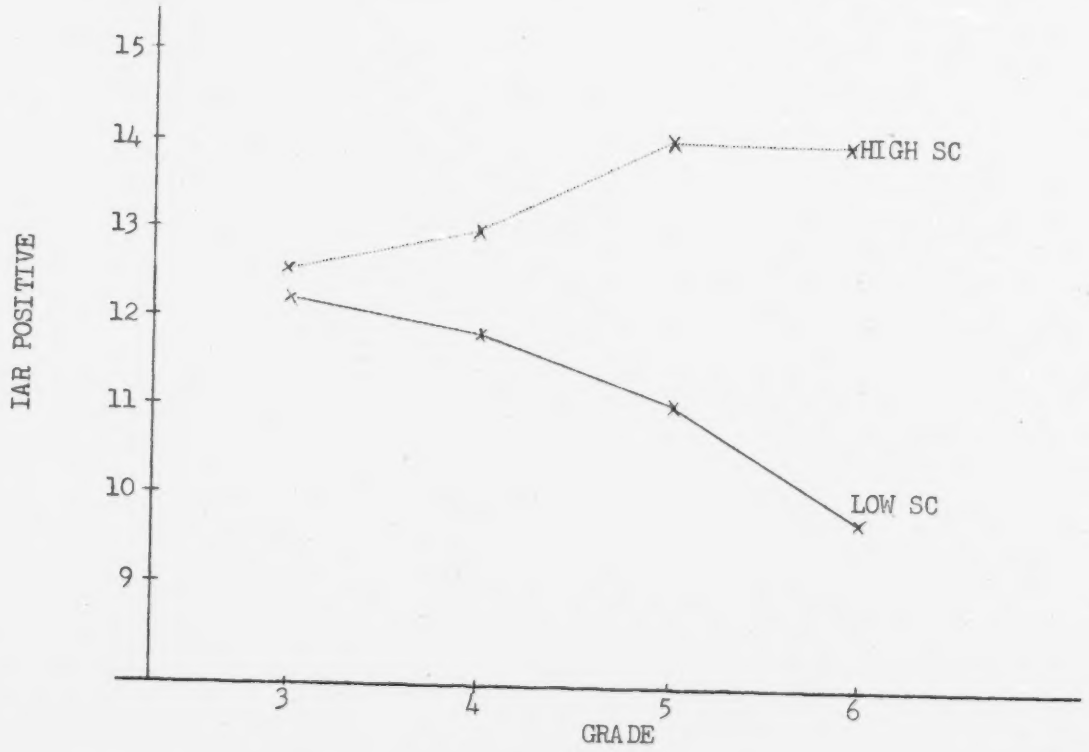

Figure 1. Grade X SC Interaction (IAR Positive)

resolved in one of two ways: (a) the pupil may adjust his self-concept in a positive direction to accommodate himself to the success experience, or (b) he may disclaim self-responsibility for the success experience, since it is not "like him" to be successful. Either alternative would reduce the threat posed by success to the Low SC pupil, but for a child whose self-concept is becoming more stable, alternative (b) would require far the lesser amount of personal effort and expense. The pupils in this sample did in fact show an increasing rejection of responsibility for success across the grades examined. The rs of self-concept and self-responsibility for success for the total sample (Table 5) seem clearly to indicate a dramatic association of IAR. Positive with self-concept, beginning with the fifth grade and becoming even more strong for the sixth grade children. This provides evidence in support of the view that children's self-concept reaches a point of stability during the fourth grade year such that some behaviors (in this case, acceptance of responsibility for success) are, far more than at earlier ages, called into the service of the self, and function more effectively to corroborate the prevailing self-concept leve. Although these conclusions must perhaps be drawn with less confidence for a cross-sectional study than for a longitudinal one, the results would seem to lend substantial support to a call for early intervention, if any program should appear feasible for helping Low SC pupils to find more positive levels of self-evaluation. Further study in this area is essential.

Table 5

Correlations of Self-concept (SC) with Self-responsibility for Success (IAR POS) and Failure (IAR NEG), and Anxiety (Total Sample)

Grade	Sex	N	SC: IAR NEG	SC: IAR POS	SC: ANXIETY
3	Boys	49	-080[a]	-66	-752**
	Girls	46	-101	270	-467**
4	Boys	47	-264	182	-365*
	Girls	49	102	169	-649**
5	Boys	45	-193	465**	-512**
	Girls	46	015	530**	-774**
6	Boys	43	066	680**	-471**
	Girls	48	218	560**	-406**
Total Group	Boys	184	-123*	333**	-502**
	Girls	189	079	378**	-583**

[a](decimal points omitted)
*p .05
**p .01

The results of the anova for anxiety are confusing in some respects and dramatically clear in others. One of the most unusual findings was the substantial decrease in anxiety for grade 5 boys at both SC levels, relative to the anxiety levels for boys in grades four and six. However, cell means for the three-way interaction (Figure 2) and for the Grade X Sex interaction were tested by the Neuman-Keuls procedure (Winer, 1962), and found to be not significantly different from each other. Another result which presents some difficulty of explanation is the almost mirror-like profile of means for Low SC girls relative to the profiles (across grades) for the other three

grade groups. Girls with Low SC show changes in anxiety level across grades which are almost exactly opposite to changes shown by Low SC boys, and essentially opposed to High SC boys and girls. Changes of High SC boys and girls, on the other hand, are virtually parallel. A clear explanation is not apparent. These phenomena may be concomitants of self-concept development or may be artifacts of the school or neighborhood from which the sample was drawn.

Two results of the analysis of variance for anxiety are quite clear, in contrast to those mentioned above. The first of these results has been demonstrated often by researchers in anxiety in children, namely, that girls consistently score higher than do boys on measures of anxiety. In all grades examined, except grade three, means for the girls were consistently higher than were means for boys.

A second clear result of the anova on anxiety has also been found in other studies. Pupils with Low SC showed much higher anxiety levels in all grades examined than did pupils with High SC. Highly significant negative correlations between self-concept and anxiety, in all grades of the total sample (including the questionable middle-range self-concept scores; Table 5) are consistent with results found in other studies. High SC boys evidenced a more substantial decrease in anxiety than did Low SC and High SC girls or Low SC boys, but that decrease was most apparent only in the fifth grade. Results of the Neuman-Keuls tests of significance between means of the Grade X SC X Sex interaction showed that significant differences were found almost exclusively between High SC and Low SC groups.

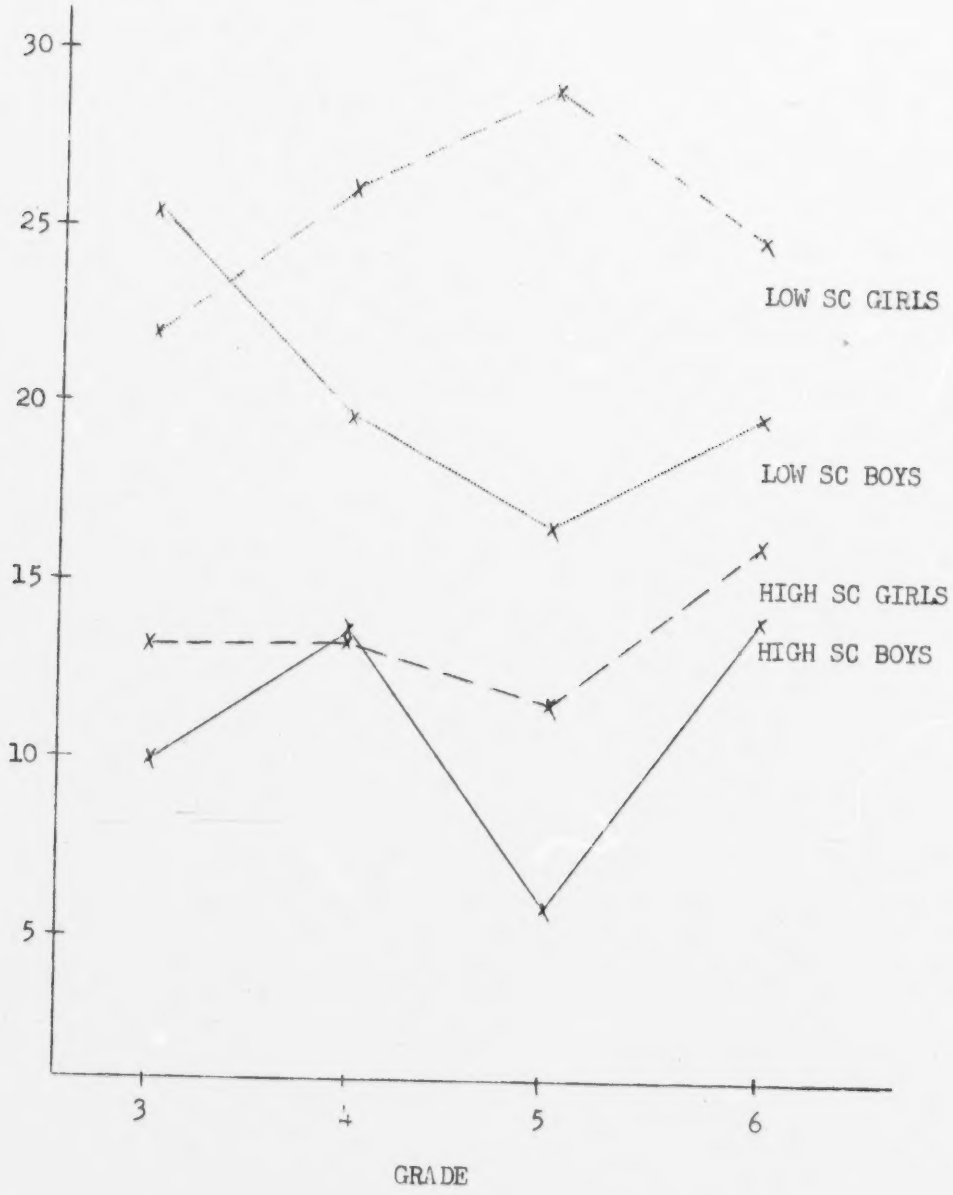

Figure 2. Grade X SC X Sex Interaction (Anxiety)

Low SC boys showed a generally consistent decrease in anxiety from fourth grade to sixth. A possible explanation is that as self-concept becomes more stable, boys with low self-concept "give up the struggle," as it were, and resign themselves to setting easily attainable short-range goals, or to setting no goals. The findings for IAR Positive also appear to support such a notion. While it would be expected that the same might hold true for Low SC girls, results of these analyses do not allow such a conclusion. Low SC girls may simply be more persistent than Low SC boys, less willing than boys to resign themselves to reducing their goal levels. It might also be the case that girls are less threatened by failures because of their relatively more favored position in the school environment.

A longitudinal study of self-concept and locus of control from, say, second through eighth or ninth grades, would be most fruitful in offering some answers to questions the present study has been able only to ask. (A study of this type is in fact presently underway.) If changes in these and other personality variables were charted across a number of years for the same sample of children, statements of the interrelationships involved could be made with greater confidence. On the basis of the information available from the present study, it would be expected that a longitudinal design might indicate that self-concept levels are relatively well established before the third grade, perhaps even before the beginning of the school career, and that a high degree of self-concept stability is achieved at the completion of the middle elementary grades. If this were true it would mean that

possible manipulations of the school environment would need to begin at the very outset of the school experience, if such attempts were to be maximally effective in enhancing self-concept development.

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